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ABSTRACT

This paper describes Innovation Configuration (IC) Mapping as an approach for assessing the extent of implementation of a program. An IC Map is similar metaphorically to a road map in that it summarizes different ways of getting from one point to another. Each map consists of basic units, or components, that can be made operational in a number of ways (variations). Components can be combined into clusters. The focus in an IC map is on identifying and describing what one would observe in a setting in which the innovation is in use. IC maps are useful in many situations, including self-reflection, peer observation, other observations, staff development diagnostics, document implementation, and personnel evaluation. An IC map does not tell a researcher how to collect the data. It is only a recording device. (SLD)

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The use of Innovation Configuration Maps in assessing implementation: The bridge between development and student outcomes.[1]

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> Well, I don't think we will need to look at Innovation Configurations. There won't be any adaptations. They are in their first year of use. (Phone call discussion with school district staff developer.)

In recent years there has been greater recognition of the importance of having systematic knowledge about the extent of implementation before drawing inferences about effects. In the past, findings from summative studies frequently were reported that included little or no data about the way that "users" in the treatment group were performing. In addition, there frequently seemed to have been an implicit assumption that no members of the so-called "control/comparison" group could be performing in ways that closely resembled behaviors of those in the treatment group. Conversely, most seemed to assume that individuals assigned to a treatment group would be users. In many studies, there seemed to have been little effort to document directly what those in the treatment and comparison groups actually were doing, or not doing. When use was considered, the self report of group members that they were, or were not, using the program/process was often considered sufficient. The bulk of the report would quickly move to analyses of findings with a systematic search for differences in student outcomes.

Today, there is an increased expectation for researchers and evaluators to document in some way that there was use of the new program/process before reporting on student outcomes. However, expectations still seem to be modest in terms of the amount of information about implementation that is to be reported. Perhaps guidelines and procedures for documenting use/non use in experimental and evaluation studies are needed?

In this paper a particular approach is offered, Innovation Configuration Mapping, for assessing the extent of implementation. The approach has emerged from research on change in schools and professional development programs where teachers have been asked to use new curriculum approaches and new teaching strategies. The construct of

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Innovation Configurations (IC) and its related measurement methodology has been used also in business and industry. Therefore, a variety of examples of applications of IC Maps in large and small school districts, and with small and large reforms , will be used to illustrate the methodology, data analysis procedures and the types of findings that are derived. An additional theme in this paper is to identify quality standards for acceptable IC Maps.

In the next section of this paper a sampling of literature related to implementation is summarized. In the succeeding section the construct of Innovation Configurations is described in more detail. The methodology for developing IC Maps is presented next. Then data from recent studies and examples of IC Maps are presented to illustrate criteria for quality IC Maps and the types of data analyses that are typically applied. The paper concludes with a summary and discussion of selected implications.

Adaptation, Reinvention and Configurations

The idea that an innovation might be altered during implementation would seem to be common sense. However, discovery and addressing this phenomenon has been slow to crystallize with theorists, researchers and evaluators. In fact, it is difficult to identify any references to this possibility in the literature. One of the earliest, if not the first, clear data-based analysis of an educational innovation being used differently across teachers and classrooms was reported by Gallagher in 1967. He observed six classrooms where four high school science teachers were supposed to be using the same BSCS curriculum. Gallagher's observed that each teacher's practices were dramatically different from one to the other and that all varied in some ways from what the curriculum developers had envisioned.

> From an operational standpoint, this (sic) data would suggest that there really is no such thing as a BSCS curriculum presentation in the schools. Rather there is the URIAH interpretation of the BSCS curriculum, and the VIRGIL interpretation of that curriculum, and so forth. The substantial differences found in topics in terms of *goals* and *levels of abstraction* suggest that the teachers have different approaches in terms of insructional strategy that result in different ideas and concepts being presented to the students. page 17

Rice and Rogers (1980) addressed this topic from a different perspective when they proposed the construct, reinvention. They took the frame of reference of the innovation to hypothesize that over time as an innovation is passed from adopter to adopter it could be changed or *reinvented.* Berman and McLaughlin (1978) in the RAND Change Agent study reported that the various innovations that they were studying were "adapted" at the host site. They then hypothesized a form of the change process, called *mutual adaptation* would be best. In other words, change would be most successful when the people changed some and the innovation was changed some to better match the local situation.

The writing of Rice and Rogers, and Berman and McLaughlin, led to the Fidelity Question: To what extent can, or should, the developers of an innovation expect users to implement the innovation exactly as prescribed by its creator(s)? A corollary question is, To what extent can an innovation be changed/adapted and still be considered the same thing? Which leads to the construct of Innovation Configurations.

In 1977 Hall and Loucks proposed the construct of Innovation Configurations. This construct emerged from their experiences, and those of their colleagues, in one of the early studies of the Levels of Use diagnostic dimension of the Concerns Based Adoption Model (Hall & Hord, 1987; Hall & Hord, 2001). In this study, research team members interviewed teachers relative to their use of the innovation of team teaching, and college teacher education faculty relative to their use of instructional modules. The field work in both studies led the research team members to report back that although teachers and professors were saying they were "using" the innovation, their descriptions of the innovation and what they were doing under its name varied dramatically. In other words, there were different *configurations* of the innovation. This discovery was considered so important that assessing Innovation Configurations (IC) became the third diagnostic dimension in the Concerns Based Adoption Model (CBAM). Since that time a very useful mapping procedure has been developed to summarize information about each configuration, and increasingly IC Maps are being used to assess implementation in research and evaluation studies. IC Maps are being used also in assessing needs and designing training and staff development interventions.

Innovation Configuration (IC) Maps

An Innovation Configuration (IC) Map metaphorically is similar to a road map in that it summarizes different ways of getting from A to B. On a road map interstate highways, state highways and rural roads are identified using different colors and types of line segments. Each of the roadways represents one way of getting from A to B. Some will be quicker, others longer in distance, some more scenic and some may fit a certain mode of transportation better. The same is true with Innovation Configurations. Some ways of using an innovation will be quicker, others very elaborate, and some may better fit a particular setting or teacher disposition. An IC Map is a summary in words of the different ways the key components of an innovation can be made operational. Each configuration represens a differnt operational form.

---- Insert Figure 1 about here ----

An IC Map consists of a number of elements, each of which is represented in Figure 1. The basic unit in an IC Map is *component*. Each component identifies a particular operational aspect of the innovation. A component can be made operational in a number of ways. Each of these ways is called a *variation*. Components can be combined to form a *cluster*. Clusters are sets of components that describe a major theme or function of the innovation.

Figures 2, 3 and 4 present sample IC Map Components from different innovations. Each has been included to illustrate certain features that are indicative of quality in an IC Map.

---- Insert Figure 2 about here ----

The IC Map components in Figure 2 have been taken from the map of the Instructor's role in Fast Track II, a ten week course for entrepreneurs. When the Center for Entrepreneurial Leadership at the Kauffman Foundation, in Kansas City, decided to sponsor national dissemination of this course and use successful entrepreneurs as instructors, they realized that there would need to be training and quality control checks on the role of the instructor. An IC Map was developed and then used to identify the content for instructor training and to assess the extent to which the instructors followed the course plan.

The IC Map components presented in Figure 2 were selected to illustrate the basic structural elements of IC Maps. Note that the number of variations for each component may vary. Component 2 has four variations, while Component 11 has 6 variations. There is no IC Mapping rule that sets the number of variations; this is decided for each component within a particular IC Map as it is being developed. We have observed, however, that four to six variations seems to be most common.

---- Insert Figure 3 about here ----

The components in Figure 3 were selected from the IC Map for Teaching and Learning Mathematics (Alquist and Hendrickson, 1999). These components illustrate more elaborate "word picture" descriptions for each variation. Note too that for this IC Map there are student components. Frequently, asking teachers to focus on components that address student behaviors can help teachers shape their practices in ways that will lead to students working in more ideal ways.

---- Insert Figure 4 about here ----

The IC Map component presented in Figure 4 is much more complex. This map was developed to describe classrooms where Essential Curriculum Principles are in place. Essentional Curiculum is a character education program. The philosophical foudation is a set of four principles that address how one behaves responsibly in a classroom and society. Since this is a heavily process and affective oriented innovation including more variations todescibe alternative operations for each component was important. Additionally, an *antithetical variation* was described and examplels of behaviors that could be reflective of a particular variation have been inclded as *indicators*. Each of these elements of the components are helpful in drawing easy to see word-pictures and to help in comairn different possible applications.

---- Insert Figure 5 about here ----

Developing an IC Map

A number of very important steps must be taken to develop a valid and effective IC Map. The key steps in this process are outlined graphically in Figure 5. An important caveat is that, in our experience, innovation developers are not effective in developing the IC Map for their product/process. There appear to be a number of reasons for this, which do not need to be discussed here. We have fount that IC Maps developed by others in collaboration with the creators of the innovation work best.

The first phase of the IC Map building process begins with reviewing all printed and media materials related to the innovation. Then a series of interviews with the developer(s) is needed. Studing the materials in advance provides important background information and the context for listening and asking centered questions during the interview. The other element of data collection in this phase is to observe a range of settings where the innovation is in use. This can be done in the field or from videos. An advantage of observing in the field is the users can be asked directly about what they see use entailing. The objective from this phase is to identify the key components and clusters of components. Of course, along the way information about possible variations emerg as well.

We have found that people use one of two ways to organize this early information about clusters, components and variations. The choice is a personal one. Some prefer a linear list or classification approach with topics and subtopics. This approach results in an inventory of potential components that is siimilar to the organization of a text book chapter with major sections, sub sections and sub sub sections. Other IC Mappers seem to prefer schema mapping or webbing. Each arm of the web comes to represent a cluster of components, or a single component. The twigs of each branch may become viariations. Either approach works well. The objective is to organize the information that is being collected in a way that will facilitate the identification of components, clusters of components and some of the variations.

Once this Cluster Map has been drafted, work on mapping the first component can begin in earnest. We usually recommend that an IC Mapping team start with a core component, but one that is easy to see and describe. Do not start with one that is overly complex or subtle. Save these till the team has had some success in drafting IC Map components and variations.

The word "seeing" was chosen deliberately above. The focus in developing an IC Map has to be on identifying and describing what one would observe in a setting where the innovation is in use. Two key questions to answer are : 1) What would I see? And 2) What would people (teachers and students) be doing? The goal is to have component labels and each variation description as visual as possible. The objective is to develop clear *word picture* descriptions of the different ways each component could be used.

Once the IC Mapping team has a first draft of most components and variations it needs to be field tsted. We refer to this experience as the "dose of reality." Rarely is there a case where a mapping team does not discover, with surprise and delight, aspects of practice that they had not been addressed in their early map draft. Following these first observations in live settings, or from viewing videos it is back to drafting and refining key components and their variations. This is an iterative process. Besides developing a useable IC Map this process also develops a consensus view of what use of the innovation entails.

It takes five (that's right 5) days to develop a respectable complete first draft IC Map. Following this phase is the time of initial tryout by the IC Map team members and a few trusted colleagues. The feedback from these experiences leads to a second formal draft. Keep in mind that throughout there needs to be opportunities for the original developers to review the draft pieces and to confirm whether these are valid depictions of their innovation.

---- Insert Figure 6 about here ----

Checking IC Maps for Quality

There are many technical details and subtle aspects that make for a useful and valid IC Map. A number of checks and tips for developing quality IC Maps are offered in Figure 6.

---- Insert Figure 7 about here ----

Using an IC Map

There are many potential uses for IC Maps. A number of these are identified in Figure 7. Six of the most popular applications are:

1) An IC Map is most useful for **self reflection**. A teacher, for example, can review what they have just done in a class period and assess their current practice by circling the variation of each component that describes what occurred. The teacher could then study some of the component variations that describe more advanced practice than s/he is currently doing. Moving from a "c" to a "b" variation might then become a personal goal.

2) An IC Map can be used to guide **peer observations**. A colleague could observe using the whole IC Map, or focus on particular components only. Then the two could meet and discuss what was observed. As was described in the IC Mapping Tips and Guideline Figures, having the "d" and "e" variations describing alternative practices, rather than "not 'a'" is critical if teachers are to place themselves at a point along the

continuum and to be able to see developmental steps, i.e., variations, from what they do now to what an ideal practice would be like.

3) IC Maps can be an **observation guide** for principals and others who are expected to observe and coach those that are implementing an innovation. All too often principals, and others, are directed to "go observe your teachers." They are not told what to look for or how to know when they see it. An IC Map then becomes a useful guide for focused observing.

4) As a **staff development diagnostic** tool IC maps can be very influential in determining the content of training and professional development sessions. Critical components of the IC Map should become the content for training. If IC Map data were collected across a sample of teachers and it was determined that for one component most teachers were using "d" and "e" variations, than that component could be the topic for an in-service session.

5) The important application of IC Maps that was identified in the introduction to this paper is to **document implementation** in research and evaluation studies. One of the authors has argued elsewhere (Hall, 1999) that it is imperative that implementation be assessed in every classroom before determining if there are meaningful differences in student outcomes. Assessing implementation needs to be done in comparison classrooms as well as in all "treatment" classrooms.

6) A problematic application of IC Maps is in **personnel evaluation**. We steadfastly have argued against this application, although the siren of IC Maps being so relevant and useful for this purpose is hard to resist. It is not that IC Maps would not work well in evaluation, it is just that we have yet to work with an organization (in education or business) that was willing to invest the time to develop an IC Map to sufficient quality and to establish its validity so that its use in personnel evaluations would be defensible. Without doing the IC Map development work, the map will be of too low quality or lack creditability to be effective in personnel evaluation. Interestingly, in one project where personnel evaluation was the goal, as the IC Map started coming to life the executives in the organization saw that they too were going to be held accountable, not only for their skill development, but the continued professional growth of their subordinates.

Analyzing IC Map data

There are a number of strategies for analyzing IC Map data. They range from the simple to the elegant. At the simplest level the ratings of each teacher can be listed by component. A visual inspection to see where there are more "a's" and "b's" will lead to the identification of users that are most in line with what the developer(s) had described as ideal practice. These users could serve as deomonstration sites, while classrooms where there are more "d's" and "e's" could be provided additional technical assistance.

IC Map data also can be summarized by component thereby removing individual identity. In this approach it is use of the innovation that is the target. The frequency of rating of each variation is tallied and summarized by component and component cluster. This form of summary is useful for identifying components that most are using well and those where more attention may be needed. As was suggested in item 4 above, these data could be used to shape the content of a future staff developemnt session.

For our research projects, Archie George has applied a hierarchical clustering technique. In this approach, a computer analysis is done to cluster together those individuals that have similar configurations. The clustering analysis begins by searching the data and identifying the two individuals who have the most identical component ratings. The analysis continues to group from there. In the end it is possible to examine clusters of subjects by IC Map ratings and to have them placed into high, medium, and low groups in terms of extent of implementation of the innovation.

Once individuals, such as teachers, have been grouped according to the extent to which their use of the innovation matches the ideal, it is possible to compare them on other factors, such as student outcomes. In one recent major study, we were able to do this relative to implementation of a constructivist approach to teaching mathematics (George, Hall, Uchiyama, 2000). In taht study, classrooms with higher "fidelity" of use of a constructivist approach to teaching mathematics experienced higher student outcomes.

Ideally, in a study of extent of implementation and student outcomes that used IC Map data it would be possible to identify which components of the innovation were associated with higher student outcomes. Then it would be possible to focus on those components for training and to seek their having the highest levels of implementation. Frequently, however, the quality and validity of the student outcome measures, the need for a very large sample size, and lack of a complete set of IC Map data limit the findings from any one study.

Discussion and Implications

The primary purpose of this paper was to introduce the construct of Innovation Configurations (IC) and the methodology for describing and assessing IC. As with any effort that brings together theory, research and practice, there are more points that need to be addressed than are appropriate for a paper of this type. For the reader who is interested in learning more, please contact the authors or one of their colleagues who are experienced with developing IC Maps. There also is a chapter in the book, *Implementing Change: Patterns, Principles and Potholes*, that examines IC in-depth. A few points that have major implications are identified and discussed briefly here.

1) Treatment and comparison groups are likely to contain a wide range of configurations.

Regardless of the amount of training and extent of quality control efforts, we have yet to see a situation where there were not individuals in the so-called treatment group that

were, at best, using very little of the components of the innovation. The data are clear, without direct assessment of the extent of implementation at the individual level, there is a great deal of risk in assuming that all are users. There are corollary risks in assuming that the comparison/control groups do not have individuals that are engaging in practices that are very similar to those identified as user variations in the Innovation Configuration Map.

An alternative approach, which we have used with great success, is to not assign individuals to use/non use groups, a priori, based on whether or not they have received training and/or materials. Instead, assign individuals to groups post hoc based on the IC Map data cluster analysis. Place individuals into user groups based on the proportion of their IC Map ratings that are clustered around "a/b" variations, versus those with mainly "c/d" variations, versus those with mostly "e/f" variations. Then the study question becomes one of comparing high level implementations to medium and low levels.

2) A burning issue related to IC Mapping is the issue of fidelity.

Many argue against asking teachers to use a practice or program in a specified way. Interestingly, we regularly meet innovation developers who refuse to say that one way is better than another. They are apt to say, "It depends. That could be good, or not. It depends on what else is going on..." There seems to be a feeling that asking teachers to teach in a certain way, or to use certain materials is a professional violation. If this reasoning is carried to its extreme anything that is done would have to be included under the umbrella label of the innovation.

Which leads to a dilemma, if there are no boundaries to what teachers can do, is there an innovation? Most innovation developers do have in mind practices that they believe will be best. For a number of reasons I would argue that the best form of honesty is to be up-front in telling teachers what those practices entail. A game of deception and discovery by trial is not treating teachers as professionals or honestly. It also causes resistance to change.

A related problem is that in nearly all change efforts there will be multiple change leaders. Even though they may believe they are on the same page, the IC Mapping process consistently unveils that the mental images and implicit definitions each leader holds about ideal use can be different in critical ways. The unintended result is that each leader communicates to the prospective users a slightly different image of what ideal use entails. One of the benefits of the IC Mapping process is that the change leaders develop a consensus about what the ideal practice looks like. This not only results in the IC Map reflecting this, but once the consensus has been constructed, all of the leaders convey the shared image to their clients.

One implication of this discussion point is that in-fact innovation developers do have in mind particular practices that they associate with the ideal. However, an IC Map does not have to include a fidelity perspective. The variations of each component could be

displayed in any order. Still, when there is a fidelity perspective there is an effective way to display this information on the IC Map by ranking the variations from "a" to "x."

3) An IC Map does not tell one how to collect the data, it is a recording device only.

Since an IC Map presents word-picture descriptions of different ways that components of an innovation can be made operational there is an implication that the only way to collect data is by direct observation. Although observation certainly is preferable, there may be a number of components where an interview could be used to collect the data. It also is possible to have teachers rate themselves, although for some components there are likely to be questions of accuracy in the self-ratings. Again, data to be recorded on an IC Map may be collected in a number of ways besides observation.

In conclusion, acknowledgment should be made that the authors did not define the term innovation early in this paper. One technical definition could be, "a process or product that represents change from current practice." The innovation could represent something that is radical and new to all, or its name could be simply a place holder for talking about a current or traditional program. IC Maps could be developed for any or all practices, new or old. The major point here is that there is likely to be a range of applications and that everyone will not be doing the same thing. They may all say they are using "it." They all have been through the same training program, and they may have "its" materials. But without direct assessment of practice for each individual there is little chance of knowing that all of the "its" are the same in practice, nor will each likely result in the same effects.

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Figure 1. Elements of IC Maps

CLUSTER NAME

1) **Component name** (***dimension 1, dimension 2, dimension 3, dimension 4***)

Variation (a)	Variation (b)	Variation (c)	Variation (d)	Variation (e)	(f)
(1)					
(2)					
(3)					
			(4)		

---

indicators/examples

2) Component name (***dimension 1, dimension 2, dimension 3, dimension 4, dimension 5***)

Variation (a)	Variation (b)	Variation (c)	Variation (d)	Variation (e)	(f)
(5)					
(1)					
(2)					
		(3)			
			(4)		

---

indicators/examples

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Figure 2.2: Two Innovation Configuration Map Components for the instructor's role in the Fast Trac II Course for business entrepreneurs.

Site _____ Session _____ INSTRUCTOR _____ Observer _____ Date __/__/__

FAST TRAC II COURSE
Innovation Configuration Map (Form A)

Form A

G.H./P.B./C.P. 12/15/93

A. Full Course Overview

2) Balanced coverage of the Six Core Modules. - Entrepreneurial Mind Set - Management & Organization - Finance - Legal Entities - Marketing - Negotiations *[6 covered, equal emphasis]*

(a)	(b)	(c)	(d)	(e)	(f)
All six modules are developed and with equal emphasis.	All six modules are developed but with one or more given less emphasis.	One or more modules is not systematically addressed.	One or two modules become the course.		

LECTURE SEGMENT 10) Utility of Content 11) Use of Examples

11) Use of Examples by the instructor during the lecture. *[Variety, type, relevance, and length]*

(a)	(b)	(c)	(d)	(e)	(f)
Examples are used throughout. Examples are interesting, varied, to the point, and congruent with the issue or topic at hand Examples include retail/ service/manufacturing & integrate participant's expertise with examples from their businesses.	Examples presented are to the point and congruent. There is limited variety in terms of retail/service/ manufacturing and participant's businesses.	Examples and stories are not always relevant to the issue or topic at hand and tend to be drawn out, or a few businesses are overused as examples. Examples may not be clearly explained.	So many examples and war stories are shared that complete coverage of the points is hindered.	So many examples and war stories particular to the Instructor's personal experience are shared that there is little variety and complete coverage of the points is hindered.	There are few examples and/or all of the examples are based in one or two businesses.

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Figure 3.4: Examples of student IC Map Components (Alquist and Hendrickson, 1998)

Innovation Configuration Map for the Mathematics Program

DoDDS-Hessen District Superintendent's Office

Rhein Main, Germany

DRAFT DRAFT DRAFT

B. Engagement with Task/Investigation

3)Student Engaged in Mathematical Tasks Throughout the Lesson (engagement, time)

a	b	c	d
Most students are engaged in mathematical tasks, most of the time.	Most students are engaged in mathematical tasks, part of the time.	Some students are engaged in mathematical tasks. Many are off task most of the time.	Few students are engaged any of the time.

4)Students' Understanding of Problem Solving Strategies (knowing your goal, knowing where you are now, knowing the steps to get to the goal, reflection)

a	b	c	d	e
Students view the open-ended problem as a whole and analyze its parts. They create, select, and test a range of strategies. Students reflect upon the reasonableness of the strategies and the solution.	Students grasp the open-ended problem as a whole and analyze its parts. Students pick an established/traditional strategy to try to solve the problem, which is applied without considering alternatives. Students reflect upon the reasonableness of the solution but not the strategy.	Students approach the open-ended problem as a whole but do not have a clear understanding of the parts. The primary focus is on getting an answer. The students' reflection is on whether the answer is right rather than the reasonableness of the strategy.	Students approach open-ended problems as unconnected/unrelated parts and do not see the problem as a whole. Students may manipulate materials and numbers, but are not clear about the reason/purpose. If observable, reflection is about procedures.	Students calculate and compute using rote and routine procedures. Students are not clear about the final goal or the relationship of the tasks to that goal. There is little or no reflection about what is being learned.

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Figure ~~3.6~~ 4: Example of a very dense and complex IC Map Component that includes indicators (from ~~Project Essential~~) The Essential Curriculum, The Teel Institute, Kansas City, Missouri

The Essential Curriculum IC Map

~~PROJECT ESSENTIAL IC~~

II. ALL DAY IN THE CLASSROOM

D. Teacher

6) The Principles and Concepts are applied throughout the day by the teacher. *(teacher application, all)*

Consistent reliance on and integration of program.	*Deliberate and conscious application of principles and concepts.*	*Emphasizes selected principles and concepts.*	*Program delivery as designed.*	*Presentation of parts and pieces at random*	*Non-use*	*Opposition to Principles and Concepts*
(Complete Integration) (a)	(Deliberate Application) (b)	(Selected Emphasis) (c)	(Motions) (d)	(Parts & Pieces) (e)	(Nothing) (f)	(Antithesis) (g)
Principles and concepts are integrated without conscious effort into activities of the day. - Teacher and students acknowledge mistakes in words ~~[illegible]~~ "Oops, I goofed." - Teachers teach students through steps of correcting errors seamlessly. - Students have "Driver's Licenses" and ~~[illegible]~~ "Drive" to other parts of the building. The license can be suspended for lack of self-control. using self-control.	All principles and concepts are developed and consciously applied throughout the day. - When opportunities arise, teacher and students draw connections to and apply specific principles and concepts. - When faced with opportunities, teacher and students talk out loud about the relevant Principle or Concepts.	Selected principles and concepts are emphasized and applied appropriately throughout the day. - Teacher leads students in applying principles of "self control", but does not refer to other concepts. - Teacher recognizes opportunities around "making mistakes", but misses opportunities related to other Principles and Concepts.	Lessons are taught, but no extrapolations to situations outside the ~~Project~~ Essential lesson context. - When obvious opportunities to refer to principles and concepts arise, teacher does not make connection. - Teacher handles fight on playground without reference to any Essential principle.	Some activities are purposefully selected to teach the concept. - Tap and Trade game is played without Principles being taught. - Social studies curriculum happens to lend itself to the selection of ~~[illegible]~~ Essential lessons.		Principles and concepts applied in classroom are antithetical to ~~Project~~ Essential. - Indiscriminate use of praise (unearned). - Self esteem activities teaches principles and concepts counter to ~~[illegible]~~ Essential's Principles and Concepts. - "In this classroom we will not make mistakes." - "I can give my students self esteem." - Mistakes are punished without any processing.

~~ALL DAY IN THE CLASSROOM~~

~~D. Teacher~~ ~~6) Principles and Concepts Applied~~

6

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Figure 5

ICC Mapping Process

Interviews **Observations**

Key Documents

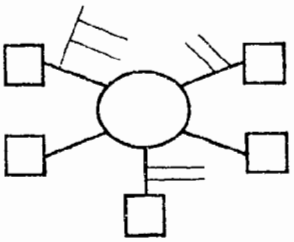
Sort

Input **Output**

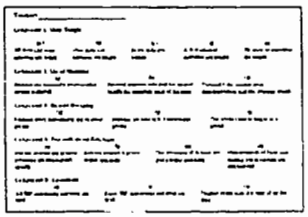
Process

(Doing)

Cluster Map



Components



Verification

Note: This is a dynamic/interactive, concensus building process.

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Figure 6

IC Mapping Checks, Tips and Guid lines

IC Mapping Quote:

"Well, I don't think we will need to look at IC. There won't be any adaptations. They are in their first year of use."(in phone call) California graduate student.

Checking Variations

1) Watch out for overly simple "a lot" to "a little" variations

2) Try to have more then one dimension in each component

3) Watch out for components with too many (greater than four) dimensions

4) Strive to have the wording of each variation as descriptive and observable as possible, i.e., *word pictures*

5) The last variation to the right should not simply be "not" doing the "a" variation. Describe what is being done *instead* of "a"

6) Be sure "e" and "f" variations are not negative or pejorative. They should be *alternatives* to what has been described in the "a" and "b" variations.

7) Do not type variations in boxes. This implies that each variation is finite and eliminates in between possibilities.

8) "a" and "b" variations should describe the best, the ideal, but do not make them sound impossible to achieve

9) Don't forget to use checklists instead of "a" to "e" variations where useful

Checking Components

1) Have components labels that are descriptive, not just a single word or topic, i.e., don't just name a noun.

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2) Note which components will require observation (s) and which could be assessed via an interview. Mark those where an interview will be needed with a note or an asterisk.

3) Determine and mark the components that are most *critical.* Use **bold** font for these.

4) How unique is each Cluster and each Component? Mapping should be only for those clusters and components that are really worth it.

5) Be sure to have rich students components along with the teacher/user components.

Figure 7

Uses and Purposes of IC Maps

Articulation and description of what use can and should look like can lead to more implementation success, sooner, and (when desired) with higher fidelity.

Develops consensus about what use looks like

Word picture descriptions that can be used in *self assessment*

Planning *staff development and training*

Evaluating an innovation's effects

Unstacking a bundle of innovations

Assessing degree of implementation

Focusing for *coaching*

Helps *communicate* expectations of the dream

Help *visualize* what can be done

Clarifies *alternatives* so that each may be considered

Provides diagnostic data for designing and targeting interventions

Changes in intentions and expectations during implementation can be assemble